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Holmgren et al.

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(54) **OPTICAL TOUCH SCREEN USING TOTAL INTERNAL REFLECTION**

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CPC **G06F 3/0308** (2013.01); **G06F 1/169** (2013.01); **G06F 1/1616** (2013.01);

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(58) **Field of Classification Search**

None

See application file for complete search history.

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(57) **ABSTRACT**

A method for use by a touch screen in which light transmitted inside the screen is scattered by an object touching the screen from outside the screen, the method including activating emitter-receiver pairs for a plurality of emitters and receivers while an object is touching a screen from outside the screen, wherein light emitted by each emitter is transmitted inside the screen, wherein each emitter is associated with a limited number of receivers that detect significant light from such emitter while no object is touching the screen, and wherein the activated emitter-receiver pairs include pairs for which the receiver is not associated with the emitter in the pair, determining that receivers not associated with emitters detect significant light due to the object scattering the light emitted by the emitters, and deriving the location where the object is touching the screen from the determining.

13 Claims, 174 Drawing Sheets

